AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1.   (Currently Amended)   A method of performing load distribution between a ~~the~~ plurality of Broadband Remote Access Servers ("BRASs"), the method comprising:

conveying individual load information about each BRAS in the plurality of BRASs to at least one Ethernet access node,

building, by an ~~the at least one~~ Ethernet access node, a database of available BRASs based on the conveyed individual load information, <u>said database including address and load information about each BRAS in the plurality of available BRASs;</u>

~~storing, into the database, address and load information about each BRAS in the plurality of available BRASs,~~

receiving an initiation message by the at least one Ethernet access node,

determining a preferred BRAS by analyzing the load information stored in the database, and

forwarding the initiation message to the preferred BRAS.

2.   (Currently Amended)   A method of performing load distribution between a plurality of <u>Broadband Remote Access Servers ("BRASs")</u> ~~BRASs~~, the method comprising:

conveying individual load information about each BRAS in the plurality of BRASs to a mediation device,

building, by the mediation device, a database of available BRASs based on the conveyed individual load information, <u>said database including address and load information about each BRAS in the plurality of available BRASs;</u>

~~storing, into the database, address and load information about each BRAS in the plurality of available BRASs,~~

receiving an initiation message by an Ethernet access node,

forwarding the initiation message to the mediation device,

determining, by the mediation device, a preferred BRAS by analyzing the load information stored in the database, and

forwarding the initiation message to the preferred BRAS.

3.   (Canceled)

4.   (Currently Amended)   The method of claim 2 wherein the forwarding the initiation message to a mediation device <u>includes</u> ~~comprises~~ substituting a destination broadcast address of the initiation message to the MAC address of the mediation device.

5.   (Previously Presented)   The method of claim 2 wherein the forwarding the initiation message to a mediation device comprises substituting a destination broadcast address of the initiation message with a predefined broadcast address of a mediation device cluster.

6.   (Currently Amended)   <u>A method of performing load distribution between a plurality of Broadband Remote Access Servers ("BRASs"), the method comprising:</u>

<u>conveying individual load information about each BRAS in the plurality of BRASs to a mediation device,</u>

<u>building, by the mediation device, a database of available BRASs based on the conveyed load information said database including address and load information about each BRAS in the plurality of available BRASs;</u>

<u>distributing the database to at least one Ethernet access node,</u>

<u>receiving an initiation message by the at least one Ethernet access node,</u>

~~determining, by the at least one Ethernet access node, a preferred BRAS by~~
~~analyzing the load information stored in the database, and~~

determining, by the at least one Ethernet access node, a preferred BRAS by analyzing the load information stored in the database, and

forwarding the initiation message from the at least one Ethernet access node to the preferred BRAS. ~~The method of claim 2 wherein the forwarding the initiation message to a mediation device comprises forwarding the initiation message to a mediation device in a VLAN which is isolated from the plurality of BRASs.~~

7. (Currently Amended) The method of claim 6 ~~claims 1, 2 or 3~~ wherein the conveying further comprises receiving a plurality of broadcast messages from each BRAS in the plurality of BRASs, wherein each broadcast contains address information and information regarding load status for the respective BRAS.

8. (Currently Amended) The method of claim 6 further comprising, ~~claims 1, 2 or 3 wherein the conveying further comprises~~ conveying the individual load information and polling each BRAS in the plurality of BRASs to obtain information regarding load status the respective BRAS.

9. (Currently Amended) The method of claim 8 wherein the polling is ~~may be~~ implemented using SNMP.

10. (Currently Amended) The method of claim 6 ~~claims 1, 2 or 3~~ wherein the conveying is performed at a predetermined interval ~~intervals~~.

11. (Previously Presented) The method of claim 8 wherein the polling is performed whenever a new Point-to-Point Protocol over Ethernet ("PPPoE") session is established.

12. (Currently Amended) The method of claim 6 ~~claims 1, 2 or 3~~ wherein ~~the~~ forwarding the initiation message to the preferred BRAS includes ~~further comprises~~ changing the destination address from the Ethernet broadcast address to a ~~the~~ MAC address of the preferred BRAS.

13.   (Currently Amended)   The method of <u>claim 6</u> ~~claims 1,2 or 3~~ wherein the address information includes <u>a</u> ~~the~~ MAC address for each BRAS.

14.   (Currently Amended)   The method of <u>claim 6</u> ~~claims 1,2 or 3~~ wherein the load information includes <u>a</u> percent of maximum load for each respective BRAS.

15.   (Currently Amended)   The method of <u>claim 6</u> ~~claims 1,2 or 3~~ wherein the initiation message is a PPPoE Active Discovery Initiation message.

16.   (Currently Amended)   The method of <u>claim 6</u> ~~claims 1,2 or 3~~ further comprising:

repeating the conveying at configurable intervals, <u>and</u>

updating the database if new information from the conveying is received.

17.   (Currently Amended)   The method of <u>claim 6</u> ~~claims 1,2 or 3~~ further comprising:

receiving a requested service in the initiation message,

verifying that the requested service is available on <u>the</u> preferred BRAS, and

if the requested service is not available, selecting another BRAS from the plurality of available BRASs.

18.   (Currently Amended)   A method for performing load distribution among a plurality of access concentrators in a network, the method comprising:

sending, by a host, a broadcast <u>initiation</u> message to the plurality of access concentrators,

determining, ~~by at least one access concentrator~~ <u>each of the plurality[[,]]</u> ~~of access concentrators,~~ a load on <u>each</u> ~~the at least one access concentrator~~ <u>of the plurality of access concentrators</u> in response to receiving the broadcast message,

waiting<u>, by each of the plurality of access concentrators, for</u> a period of time before sending a response message to the broadcast message, wherein <u>access</u>

~~concentrators with a greater load wait for a longer period of time; the period of time is a function of the load on the at least one access concentrator,~~

receiving, by the host, a plurality of response messages in response to the broadcast message,

determining, by the host, a relative load on each access concentrator based on the order in which the plurality of response messages were received;

determining from the relative loads, one or more of the plurality of access concentrators capable of fulfilling predetermined service requirements of the host; and

selecting an access concentrator from the one or more of the plurality of access concentrators capable of fulfilling the predetermined service requirements of the host.

~~based on the plurality of response messages, the plurality of access concentrators which are capable of fulfilling predetermined service requirements of the host, and~~

~~selecting an access concentrator from the plurality of access concentrators, wherein the selected access concentrator sent the first response message to the host, such that the host can establish a PPP session with the selected access concentrator.~~

19.   (Currently Amended)   A method of distributing a load ~~for performing load distribution~~ among a plurality of access concentrators in a ~~the~~ network, the method comprising:

receiving in a mediation device, a broadcast message addressed to the plurality of access concentrators,

recording the MAC address of a sender of the broadcast message,

forwarding the broadcast message to ~~onto~~ the plurality of access concentrators,

intercepting a plurality of response messages addressed to the sender of the broadcast message,

selecting the access concentrator having been the first to forward a respective response message,

forwarding to the sender, the response message received from the selected access concentrator, wherein the load of each access concentrator is self-determined ~~plurality of access concentrators determines the load on the respective access~~

~~concentrator~~ in response to receiving the broadcast message and waits a period of time before sending a response message<u>, wherein access concentrators with a greater load wait for a longer period of time.</u>

~~to the broadcast message, wherein the period of time is a function of the load on the at least one access concentrator, such that a sender can establish a PPP session with the selected access concentrator.~~

20.   (Canceled)

21.   (Previously Presented)   A network node comprising:

a processor,

a network interface in communication with the processor, and

a memory coupled to the processor, wherein the memory includes instructions

for:

receiving a broadcast message,

determining a load on the processor, in response to receiving the broadcast message, and

waiting a period of time before sending a response message to the broadcast message, wherein the period of time is a function of the determined load on the processor.

22.   (Currently Amended)   <u>The method according to claim 21</u> ~~In any of the previous claims 18 through 21~~, the broadcast message is a PPPoE Active Discovery Initiation message.

23.   (Currently Amended)   <u>The method according to claim 22</u> ~~In any of the previous claims 18 through 22~~, the response message is a PPPoE Active Discovery Offer message.

24.   (New) The method according to claim 18, the broadcast message being a PPP0E Active Discovery Initiation message.

25. (New) The method according to claim 24, the response message being a PPPoE Active Discovery Offer message.

26. (New) The method according to claim 19, the broadcast message being a PPP0E Active Discovery Initiation message.

27. (New) The method according to claim 26, the response message being a PPPoE Active Discovery Offer message

28. (New) The method of claim 2 wherein the conveying further comprises receiving a plurality of broadcast messages from each BRAS in the plurality of BRASs, wherein each broadcast contains address information and information regarding load status for the respective BRAS.

29. (New) The method of claim 2 further comprising, conveying the individual load information and polling each BRAS in the plurality of BRASs to obtain information regarding load status the respective BRAS.

30. (New) The method of claim 2 wherein the conveying is performed at a predetermined interval.

31. (New) The method of claim 2 wherein forwarding the initiation message to the preferred BRAS includes changing the destination address from the Ethernet broadcast address to a MAC address of the preferred BRAS.

32. (New) The method of claim 2 wherein the address information includes a MAC address for each BRAS.

33. (New) The method of claim 2 wherein the load information includes a percent of maximum load for each respective BRAS.

34. (New) The method of claim 2 wherein the initiation message is a PPPoE Active Discovery Initiation message.

35. (New) The method of claim 2 further comprising:

repeating the conveying at configurable intervals, and

updating the database if new information from the conveying is received.

36. (New) The method of claim 2 further comprising:

receiving a requested service in the initiation message,

verifying that the requested service is available on the preferred BRAS, and

if the requested service is not available, selecting another BRAS from the plurality of available BRASs.

37. (New) The method of claim 6 wherein forwarding the initiation message to the preferred BRAS includes changing the destination address from the Ethernet broadcast address to a MAC address of the preferred BRAS.

38. (New) The method of claim 6 wherein the address information includes a MAC address for each BRAS.

39. (New) The method of claim 6 wherein the conveying further comprises receiving a plurality of broadcast messages from each BRAS in the plurality of BRASs, wherein each broadcast contains address information and information regarding load status for the respective BRAS.

40. (New) The method of claim 6 further comprising, conveying the individual load information and polling each BRAS in the plurality of BRASs to obtain information regarding load status the respective BRAS.

41.   (New) The method of claim 6 wherein the conveying is performed at a predetermined interval.

42.   (New) The method of claim 6 wherein forwarding the initiation message to the preferred BRAS includes changing the destination address from the Ethernet broadcast address to a MAC address of the preferred BRAS.

43.   (New) The method of claim 6 wherein the address information includes a MAC address for each BRAS.

44.   (New) The method of claim 6 wherein the load information includes a percent of maximum load for each respective BRAS.

45.   (New) The method of claim 6 wherein the initiation message is a PPPoE Active Discovery Initiation message.

46.   (New) The method of claim 6 further comprising:
repeating the conveying at configurable intervals, and
updating the database if new information from the conveying is received.

47.   (New) The method of claim 6 further comprising:
receiving a requested service in the initiation message,
verifying that the requested service is available on the preferred BRAS, and
if the requested service is not available, selecting another BRAS from the plurality of available BRASs.

48.   (New) The method of claim 6 wherein forwarding the initiation message to the preferred BRAS includes changing the destination address from the Ethernet broadcast address to a MAC address of the preferred BRAS.

49.   (New) The method of claim 6 wherein the address information includes a MAC address for each BRAS.